SANTA CRUZ BIOTECHNOLOGY, INC.

DMRT1 siRNA (h): sc-92489

BACKGROUND

DMRT1 (doublesex- and mab-3-related transcription factor 1), also known as DMT1 or DM domain expressed in testis protein 1, is a 373 amino acid protein that contains a highly conserved zinc finger-like DNA-binding motif (DM domain). The DMRT genes encode a large family of transcription factors that participate in the sexual development of vertebrates and invertebrates. In humans, DMRT1 is expressed only in testis and is transported to the nucleus by karyopherin β1. DMRT1 is required for testis development and may be involved in the formation of the seminiferous tubules. The gene encoding DMRT1 exhibits a gonad-specific and sexually dimorphic expression pattern during embryogenesis in mammals and birds. Hemizygosity of the DMRT1 gene results in abnormal testicular development and XY feminization. DMRT1 is expressed as four isoforms due to alternative splicing.

REFERENCES

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2. Pask, A.J., et al. 2003. Expression of DMRT1 in the mammalian ovary and testis—from marsupials to mice. Cytogenet. Genome Res. 101: 229-236.
3. Ounap, K., et al. 2004. Three patients with 9p deletions including DMRT1 and DMRT2: a girl with XY complement, bilateral ovotestes, and extreme growth retardation, and two XX females with normal pubertal development. Am. J. Med. Genet. A 130A: 415-423.
4. Yao, K., et al. 2006. Analysis of regulatory regions of mammalian DMRT1 genes. Yi Chuan 28: 825-830.
5. Cheng, H.H., et al. 2006. Transcriptional diversity of DMRT1 (dsx- and mab3-related transcription factor 1) in human testis. Cell Res. 16: 389-393.
6. Kim, S., et al. 2007. Cell type-autonomous and non-autonomous requirements for Dmrt1 in postnatal testis differentiation. Dev. Biol. 307: 314-327.
7. Hong, C.S., et al. 2007. The function of Dmrt genes in vertebrate development: it is not just about sex. Dev. Biol. 310: 1-9.
8. Lei, N., et al. 2007. Sex-specific differences in mouse DMRT1 expression are both cell type- and stage-dependent during gonad development. Biol. Reprod. 77: 466-475.

CHROMOSOMAL LOCATION

Genetic locus: DMRT1 (human) mapping to 9p24.3.

PRODUCT

DMRT1 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DMRT1 shRNA Plasmid (h): sc-92489-SH and DMRT1 shRNA (h) Lentiviral Particles: sc-92489-V as alternate gene silencing products.

For independent verification of DMRT1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-92489A, sc-92489B and sc-92489C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

DMRT1 siRNA (h) is recommended for the inhibition of DMRT1 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

DMRT1 (A-9): sc-377167 is recommended as a control antibody for monitoring of DMRT1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DMRT1 gene expression knockdown using RT-PCR Primer: DMRT1 (h)-PR: sc-92489-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.